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# UTILITY PATENT APPLICATION TRANSMITTAL

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Hiroyasu SUGANO, et al.

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## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1. ☒ Fee Transmittal Form
2. ☒ Specification, Claims & Abstract ..... [ Total Pages: 32 ]
3. ☒ Drawing(s) (35 USC 113) ..... [ Total Sheets: 14 ]
4. ☒ Oath or Declaration ..... [ Total Pages: 5 ]
  - a. ☒ Newly executed (original or copy)
  - b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional with Box 17 completed)
    - i. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation by Reference (usable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Microfiche Computer Program (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
  - a. ☐ Computer Readable Copy
  - b. ☐ Paper Copy (identical to computer copy)
  - c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

8. ☒ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
12. ☒ Preliminary Amendment
13. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
14. ☐ Small Entity Statement(s) ☐ Statement filed in prior application, status still proper and desired.
15. ☒ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☒ Other: Letter to the Examiner Requesting Approval of Drawings (Fig. 18).

17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No:        /       

## 18. CORRESPONDENCE ADDRESS

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Hiroyasu SUGANO, et al.

Serial No.: To Be Assigned

Group Art Unit: To Be Assigned

Filed: July 6, 2000

Examiner: To Be Assigned

For: INFORMATION DISPLAY METHOD AND APPARATUS AND  
RECORDING MEDIUM

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

The above referenced application is filed concurrently with this Preliminary  
Amendment.

If any further fees are required in connection with the filing of this Amendment, please  
charge same to our Deposit Account No. 19-3935.

Before examination of the above-identified application, please amend the application as  
follows:

**IN THE CLAIMS:**

Please **ADD** new claims 34 and 35 as follows:

34. (NEW) A method of controlling a condition information which changes from

time to time in a condition information management server transmitting and receiving the condition information from terminals connected to a network, comprising:

storing in said condition information management server the condition information received from each of said terminals;

determining display mode changing information; and

transmitting automatically the condition information received by the condition information management server and the display mode changing information to the other terminals through the network.

35. (NEW) A method of displaying condition information as claimed in claim 34, further comprising determining freshness of the condition information by calculating a difference between a time the condition information management server receives the condition information from each of said terminals and a time the condition information management server transmits the condition information from each of said terminals and a time transmits the condition information to the other terminals; and

determining depending on the freshness of the condition information a display mode of the condition information, wherein the condition information management server transmits to the other terminals the display mode of the condition information as the display mode changing information.

**REMARKS**

New claims 34 and 35 are added.


No new matter is added in this Preliminary Amendment.

Also filed concurrently herewith is a Letter to the Examiner Requesting Approval of the Drawings (Fig. 18 in black and white) in the event the Examiner does not approve Fig. 18 in color filed concurrently with the above referenced application.

It is respectfully requested that this Preliminary Amendment be entered in the above-referenced application.

Respectfully submitted,  
STAAS & HALSEY LLP

By: \_\_\_\_\_

  
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Date: July 6, 2000

1 TITLE OF THE INVENTION

INFORMATION DISPLAY METHOD AND APPARATUS AND  
RECORDING MEDIUM

5 This application is related to and claims priority to Japanese Patent Application No. 11-195190, filed July 09, 1999 in Japan, the contents of which are incorporated herein by reference.

9 BACKGROUND OF THE INVENTION

Field of the Invention

13 The present invention relates to a method for improving the displaying of relevant information in a system having a function of acquiring and displaying condition or status information which changes from time to time such as the operating condition of a computer system or the like.

17 Description of the Related Art

21 With the development and popularization of networks and systems utilizing the networks, it is now possible for users to obtain necessary information by transmitting and receiving various pieces of information.

For example, in a whereabouts or location management system, information indicating user conditions which change from time to time is transmitted and received through a network.

25 In such a system, each user using a terminal connected to the network transmits to a relaying apparatus, such as a server, or directly to a terminal of another user, information indicating the user's conditions such as the user's destination, the user's current location, busy condition and feeling. A display system of the terminal may include a graphical user interface (GUI). Moreover, the user is capable of referencing the user condition information collected  
29 in the server (relaying apparatus) from each user through the network or the user condition

1 information transmitted directly to the user terminal. For example, when the user is far away  
at a distant place or nearby, if transmission and reception of information are possible through  
the network, respective conditions of the user can be verified as if the user was nearby.

5 However, in the related art, only contents have been displayed when referencing  
information which changes from time to time such as displaying user condition information.  
Therefore, it has been difficult to determine when the user condition information has been  
updated or when this information has been acquired. Further, it has been difficult to determine  
the reliability of the information to which reference has been made.

9 It is very preferable particularly when communicating with users to recognize the user  
status. For example, to determine, depending on the condition of the user, whether a message  
should be transmitted to the user immediately by telephone or by electronic mail (E-mail) to be  
read later by the user. Therefore, whereabouts or location management systems have been  
13 proposed that transmit and receive through the network user conditions which change from  
time to time.

Moreover, not only the user or personal status but also a computer condition can also  
be considered as an object which changes from time to time.

17 Even in a system for monitoring the operating condition of a computer system, it is also  
possible in the same manner to collect conditions of network devices, lines and connected  
devices to monitor the conditions of devices existing not only in a visible or local area but also  
in a distant place.

21 In systems for referencing or accessing the user conditions which change from time to  
time, such as the whereabouts management system or the like explained above, when the  
information regarding user conditions is updated depending on change of user conditions, other  
users can always recognize the latest user conditions when referencing or accessing the user  
25 conditions. However, if, in spite of the change of user conditions, information indicating the  
user conditions are not updated, because the user has forgotten to make an update or system  
trouble has occurred, other users reference the conditions which are different from the current

1 user conditions, resulting in erroneous recognition, further erroneous action or determination.

In such a system, since the user only obtains and displays the condition information recorded in the server or the like, only the contents of registered information can be recognized. Therefore, the user cannot determine the accuracy of the displayed information.

5 As the solution, the registration time (update time) of information is stored when the condition information is registered and the registration time (update time) is displayed together when the condition information is displayed. However, the user can only recognize how long a time has passed from registration of information by recognizing the displayed update time and current  
9 time and then calculating difference between such times. Therefore, it is difficult for the user to determine the accuracy of information intuitively by observing the display of the registration (update time) and condition information.

On the other hand, in the whereabouts management system or the like explained above,  
13 to improve reliability of the information itself, a system has been realized which can automatically update the information regarding user conditions, in cooperation with a system for automatically detecting the attending place or location of users, depending on working conditions of users, even if the user does not directly update the information regarding the  
17 user's conditions.

However, at present, with development of network technology and substantial functions of portable terminals, such as hand-held terminals or the like, the user is now capable of enjoying various services not only by using various kinds of computer systems (or services) by  
21 connecting to a predetermined network in predetermined places but also by using a communication unit (communication mode) in the current place without selection of time and place.

Namely, it is now possible to use a computer with a desired communication unit at any  
25 time and in any place.

When the computer is used in such environments, a problem is then generated, because in the whereabouts management systems explained above, the user is not always connected to

1 the whereabouts management system and therefore the user cannot always detect the latest  
condition of users collected in the whereabouts management system. Moreover, because such  
information changes from time to time as time passes the collected information will have lower  
accuracy or become erroneous.

5 For example, it is assumed that a certain user X obtains the conditions of user A and  
user B utilizing a hand-held terminal and stores the information of users A and B obtained in  
the hand-held terminal and thereafter leaves the office or house carrying the hand-held  
terminal.

9 Here, it is assumed, for example, that when the user X has obtained the condition  
information, the user A was attendant at his own seat in the office and the user B was taking  
part in a conference or meeting, and about an hour later, the user A went to business trip and  
the condition information of the user A was accordingly updated, meanwhile the user B was  
13 still attendant at the conference.

17 Here, it is also assumed, for example, that the user X recognizes or obtains the  
conditions of the users A and B using the hand-held terminal outside of the office. If  
connection to the whereabouts management system is possible from outside of the office, it is  
possible to obtain and display the changed latest conditions and it is also possible that  
conditions of the user A have changed to "business trip". However, if connection is  
impossible, the user X can reference only the information of the users A and B obtained an  
hour before (regarding the user A, before going to business trip). Therefore, the user X  
21 recognizes that the conditions of user A is still "attendance", even if the condition of user A  
has changed to "business trip".

25 This situation occurs even if it is possible to obtain and hold the information required  
by users, because as time passes changes in reliability of obtained information cannot be  
recognized or determined.

As user conditions always change, reliability of user condition information gradually  
deteriorate until the next user condition information update.



1           The users cannot understand the reliability of the condition information only by  
observing or recognizing the content of the condition information.

          It is therefore an object of the present invention that upon referencing or accessing  
information which changes from time to time and collected in a system, a display mode is  
5       changed when displaying the collected information depending on the reliability of the  
information such that a user can recognize or observe at a glance contents of the collected  
information and the reliability of the contents.

## 9       SUMMARY OF THE INVENTION

          The present invention is directed to a system and method for monitoring and displaying  
the reliability of information with the passage of time. By paying attention to the fact that the  
uncertainty of information which changes from time to time increases as time passes from a  
13       time the information was generated, the present invention determines a reference time for  
determining freshness (or timeliness) of the relevant information, calculates, at a time of  
making reference to the relevant information, the difference between a display time and the  
reference time, determines freshness of the information based on such calculated difference and  
17       displays the freshness information by changing a display mode depending on the determined  
freshness.

          In particular, when a user registers or acquires condition information which changes  
from time to time, the reference time is set to determine reliability of such condition  
21       information and the time having passed from the reference time is calculated when the  
condition information is displayed. Depending on the period of time passage calculated, the  
display mode is updated allowing a user to recognize or observe at a glance superior or  
deterioration of reliability.

25       Therefore, the user can verify reliability of information which changes from time to  
time at a glance upon referencing or acquiring the same information for review or verification.  
Moreover, the user can accurately make determination or decisions and plan a schedule based

on the relevant information.

## BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be described further, by way of examples, with reference to the accompanying drawings, in which:

Fig. 1 is a diagram illustrating the configuration of the apparatus for the user condition information management system.

Fig. 2 is a diagram illustrating the system configuration of the first embodiment of the invention.

Fig. 3 is a diagram illustrating the flow of process in the first embodiment of the invention.

Fig. 4 is a diagram illustrating an example of the freshness level determination table.

Fig. 5 is a diagram illustrating an example of the display mode table.

Fig. 6 is a diagram illustrating an example of display image of freshness display.

Fig. 7 is a diagram illustrating the system configuration of the second embodiment of the invention.

Fig. 8 is a diagram illustrating the flow of process in the second embodiment of the invention.

Fig. 9 is a diagram illustrating another example of the display mode table.

Fig. 10 is a diagram illustrating another example of the display mode table.

Fig. 11 is a diagram illustrating an example of condition information to be stored in the storage unit.

Fig. 12 is a diagram illustrating an example of the flow of process in the freshness management unit of the second embodiment of the invention.

Fig. 13 is a diagram illustrating another example of display image of freshness display.

Fig. 14 is a diagram illustrating an example of the condition information stored in the

1 storage unit of the second embodiment of the present invention.

Fig. 15 is a diagram illustrating the flow of process in the third embodiment.

Fig. 16 is a diagram illustrating another example of display image of freshness display.

Fig. 17 is a flowchart illustrating contents of process for displaying freshness level of  
5 group.

Fig. 18 is a diagram illustrating another example of display image of freshness display  
using color.

## 9 DESCRIPTION OF THE PREFERRED EMBODIMENTS

An example in which the present invention is applied to a user condition information  
management system for management of user conditions will be explained.

Fig. 1 illustrates an apparatus structure of a user condition management system.

13 This system is formed of a server 1 and a plurality of terminals 3, 4, 5 connected  
through various kinds of networks.

Here, the network 2 does not designate only one form but expresses the total network  
(telephone network, radio communication network, LAN, WAN, Internet, or the like) used for  
17 communicating, including the hand-held telephone set 3, personal computer 4 and mobile  
terminal 5.

The server 1 collects and accumulates information about conditions of users transmitted  
from terminals 3, 4, 5 and also transmits the collected user condition information to each user  
21 depending on a request from each user or in a predetermined timing.

The terminals 3, 4, and 5 set and detect the information about conditions of each user,  
transmit this information to the server 1 and display the user condition obtained from the  
server 1. Any type of device such as personal computer, hand-held telephone set or mobile  
25 terminal which may be connected to the network can be used as terminals 3, 4 and 5.

## 1 First Embodiment

A system configuration of the first embodiment is illustrated in Fig. 2.

In the first embodiment, the server 1 includes a freshness management unit 1-1 and a display control unit 1-2. This configuration is just suitable when all processes are performed in the server and only transmission and reception of processed data are performed in the terminal side. For example, services by the condition information management system are provided through a web site on the Internet and the terminals 3, 4, 5 are provided with only general purpose browser software.

The server 1 further includes a communication unit 1-3 communicating through the network 2, a request determining unit 1-4 processing, depending on the type, a request from the terminals 3, 4, 5 received by the communication unit 1-3, an update request processing unit 1-5 processing an update request for updating the condition information, an acquiring request processing unit 1-6 processing an acquiring request of the condition information, a condition information database (DB) 1-7 storing the condition information, the freshness management unit 1-1 determining freshness information of the condition information by making reference to a clock 1-8, the display control unit 1-2 updating a display mode of the condition information depending on the freshness information, and the clock 1-8 metering the time.

The terminals 3, 4, 5 include a communication unit 3-7 communicating through the network 2, a request transmitting unit 3-4 transmitting the user condition information acquisition request to the server 1 through the communication unit 3-7, a response processing unit 3-5 processing a response to the user condition information acquisition request, a storage management unit 3-6 managing a storage device 3-8 and storing the condition information of users and a user interface unit (UI) 3-1 consisting of an input unit 3-3 accepting an input from the user and a display unit 3-2 displaying the user condition information.

A user condition detecting apparatus 6 is an independent apparatus detecting the attending place of the user and an apparatus included in a computer or provided in cooperation with a computer for detecting condition of the user. This apparatus may be replaced with an

1 existing apparatus and is not the essential portion of the present invention. Therefore, detailed  
explanation of this user condition detecting apparatus 6 is omitted here.

First, the processing flow of the server 1 when it has received the information about  
user conditions will be explained. The communication unit 1-3 connected to the network 2  
5 receives the user condition information update request from the terminals 3, 4, 5 or from the  
apparatus 6 detecting the user condition information and then transfers this request to the  
request determining unit 1-4. The request determining unit 1-4 recognizes that this request is  
the condition information update request and transfers the condition information update request  
9 to the update request processing unit 1-5. Upon reception of this request, the update request  
processing unit 1-5 acquires the current time from the clock 1-8 and causes the condition  
information DB 1-7 to store the current time as a pair with the condition information as the  
update time of the condition information.

13 The processing flow for referencing the user condition information to which the present  
invention is applied will be explained with reference to Fig. 3. When the user using the  
terminal 3 requests the acquisition of the condition information of other users (O1 of Fig. 3)  
through the input unit 3-3, the condition information acquiring request is sent to the request  
17 transmitting unit 3-4 and then transmitted to the server 1 through the network 2 through the  
communication unit 3-7 (O2 of Fig. 3). The communication unit 1-3 of the server 1 receives  
the condition information acquiring request transmitted through the network 2 and then  
transmits the condition information acquiring request to the request determining unit 1-4.

21 When the request determining unit 1-4 determines that the relevant request is the condition  
information acquiring request, it transmits the condition information acquiring request to the  
acquiring request processing unit 1-6 (O3 of Fig. 3). The acquiring request processing unit 1-  
6 reads, from the condition information DB 1-7, the condition information about users  
25 requested based on the condition information acquiring request. At this time, the update time  
stored together with the condition information is also acquired simultaneously and it is  
transmitted to the freshness management unit 1-1 together with the condition information (O4

of Fig. 3). The freshness management unit 1-1 calculates the difference between a current time and the update time and determines the freshness of the condition information depending on a preset rule or algorithm (O5 of Fig. 3). Moreover, the display control unit 1-2 determines the display mode of the condition information by determining the contents to be displayed depending on the condition information and the freshness information and then transmits the display contents to the acquiring request processing unit 1-6 (O6 of Fig. 3). The acquiring request processing unit 1-6 forms a response, which includes the condition information, the freshness information and the display contents and transmits the response to the communication unit 1-3 and the communication unit 1-3 sends the condition information and freshness information to the terminals 3, 4, 5 having issued the acquiring request through the network 2 (O7 of Fig. 3).

The terminals 3, 4, 5 transmit the response including the condition information, the freshness information and the display contents and received through the communication unit 3-7 to the response processing unit 3-5. The response processing unit 3-5 causes the storage unit 3-8 to store the received response via the storage management unit 3-6 and simultaneously transmits the information received in the response to the display unit 3-2 (O8 of Fig. 3) and the display unit 3-2 displays the condition information in the display mode depending on the freshness information and the display contents (O9 of Fig. 3).

Fig. 4 illustrates an example of freshness determination by the freshness management unit 1-1 using a freshness level determination table. In this example, the freshness information is determined depending on the time passage from the time in which the condition information is set (update time). The freshness management unit determines whether or not the difference from the time when the condition information is set (update time) and the time when the condition information is displayed is within 10 minutes, greater than 10 minutes but within 30 minutes, greater than 30 minutes but within an hour and over an hour and the determination result is expressed by a freshness level such as freshness levels 1, 2, 3 and 4.

The display control unit 1-2 determines the display mode of the condition information

1 depending on the condition information and the freshness levels. Fig. 5 illustrates an example  
 of a table in which the display mode corresponding to the freshness level is set. In Fig. 5,  
 three kinds of conditions, “happy”, “angry” and “busy” indicating the feeling or condition of  
 the user are indicated as the condition information of the user and these conditions are  
 5 expressed in the display mode with a figure data (icon) to realize visual recognition. Here, the  
 items expressing the feeling and condition of the users are never limited to the above example  
 and various items such as “attendant”, “absence”, “business trip”, “conference”, “working”  
 and “lecture” may also be used to express destination, whereabouts and feeling of the users.

9 In Fig. 5, concentration of the figure data indicating the condition information is  
 changed depending on the freshness level. The freshness level “freshness 1” is most thick,  
 which indicates the freshness level that the condition information has been just updated, and  
 the condition information displayed as figure data becomes thinner as the freshness level  
 13 deteriorates with passage of time such as “freshness 2”, “freshness 3” and “freshness 4” in  
 this sequence.

The display mode of the condition information displaying condition information as  
 figure data (icon) and indicating the freshness level may be done by updating a bit map  
 17 information or by preparing the bit map information corresponding to the freshness level and  
 then selecting the bit map information depending on the freshness level.

Fig. 6 illustrates an example of display of the condition information of the users  
 depending on the freshness level.

21 The freshness level of the condition information of users “SATOMI” and “TOHKO” is  
 the freshness level 1, which indicates that a long time has not yet passed from update of the  
 condition information. The freshness level of the condition information of user “KENTA” is  
 the freshness level 3, which indicates that 30 minutes has passed from update of “KENTA”’s  
 25 condition information. The freshness level of the condition information of user “ERI” is the  
 freshness level 4, which indicates that 1 hour has passed from update of “ERI”’s condition  
 information.

1 As explained above, the user can determine immediately the accuracy of condition  
information to which reference is made by observing at a glance the condition information  
displayed.

## 5 Second Embodiment

A system configuration in the second embodiment of the present invention is illustrated  
in Fig. 7. In the second embodiment, the freshness management unit 3-9 and the display  
control unit 3-10 are provided in the terminals 3, 4, 5 in place of the server 1. This  
9 configuration is an adequate example of the case in which the exclusive application software is  
installed in both the server 1 and the terminals 3, 4, 5 for respective processes by the server 1  
and the terminals 3, 4, 5. For example, the system is configured as a discrete type system so  
that the server 1 has the function to receive and control the condition information of users  
13 transmitted from the terminals 3, 4, 5 and transmit the condition information of users  
depending on the request from the terminals 3, 4, 5, while the terminals 3, 4, 5 has the  
function to transmit the condition information to the server 1 and the function to display the  
condition information received.

17 In this configuration, only the condition information and additional information such as  
the update time added thereto are transmitted to the terminals 3, 4, 5 from the server 1 and  
thereby amount of data flowing through the network 2 can be reduced.

21 Moreover, since the display control unit 3-10 is provided in the terminals 3, 4, 5, the  
display mode can be selected in the terminal side to increase flexibility.

The process for storing the user condition information about condition to the condition  
information DB 1-7 is similar to that of the first embodiment and the explanation of this  
process will be omitted here.

25 In this system configuration, the process for making reference to the condition  
information will be explained with reference to Fig. 8. When the user using the terminal  
requests to acquire condition information about the other users via the input unit 3-3 (O11 of



Fig. 8), the condition information acquiring request is sent to the request transmitting unit 3-4 and then transmitted to the server 1 through the network 2 via the communication unit 3-7 (O12 of Fig. 8). The communication unit 1-3 of the server 1 receives the condition information acquiring request transmitted through the network 2 and then transmits the condition information acquiring request to the request determining unit 1-4. When the request determining unit 1-4 determines the request is the condition information acquiring request, it transmits the condition information acquiring request to the acquiring request processing unit 1-6 (O13 of Fig. 8). The acquiring request processing unit 1-6 reads from the condition information DB 1-7 the condition information about the user requested by the condition information acquiring request. In this case, the update time stored together with the condition information is also acquired simultaneously and this update time is transmitted together with the condition information to the terminals 3, 4, 5 via the communication unit 1-3 (O14 of Fig. 8).

The terminals 3, 4, 5 transmit the condition information and the update time received by the communication unit 3-7 to the response processing unit 3-5. The response processing unit 3-5 causes the storage unit 3-8 to store the received condition information and the update time via the storage management unit 3-6 and simultaneously transmits the condition information and the update time to the freshness management unit 3-9 (O15 of Fig. 8) and the freshness management unit 3-9 calculates the difference between the current time and the update time and determines freshness of information depending on the preset rule or algorithm (O16 of Fig. 8). Moreover, the display control unit 3-10 determines the display mode of the condition information by determining the contents to be displayed depending on the condition information and the freshness information and then transmits the display contents to the display mode to the display unit 3-2 (O17 of Fig. 8). Here, the freshness management unit is integrated with the display control unit and therefore the display content may be directly updated in a certain case by a preset rule or algorithm. The display unit 3-2 displays the condition information in the display mode determined by the display control unit 3-10 (O18 of

Fig. 8).

Above example assumes that the terminals 3, 4, 5 request the condition information from the server 1 and display the same information.

When the terminals 3, 4, 5 are provided with the freshness management unit 3-9 and the display control unit 3-10, the following method can also be applied as a method of determining the freshness information and a method of updating the display mode of the condition information.

In the above example, when the condition information is requested from the server 1, both the condition information and the update time can be acquired, but it is also possible that only the condition information is transmitted to the terminal depending on the disclosing level of the condition information in the server 1 or because the update time is never stored in the server 1. In this case, upon reception of the condition information from the server 1, the response processing unit 3-5 sets a receiving time as a reference time for determination of the freshness information (hereinafter referred to as the latest acquiring time) and records the condition information and the latest acquiring time to the storage unit 3-8 and also transmits the condition information and the latest acquiring time information to the freshness management unit 3-9. The freshness management unit 3-9 determines the freshness of the condition information based on the difference between the latest acquiring time and the current time.

Moreover, the latest condition information cannot always be obtained at the time of referencing the user condition information. For example, it is assumed that the user acquires the condition information using the portable terminal such as the hand-held telephone set 3 and the mobile terminal 5 before going to business trip and thereafter the user goes to the business trip by carrying the terminal. When the user references the condition of users during the business trip, if connection to the server 1 is possible, the latest condition information may be acquired and displayed in the sequence explained above. But, if connection to the server 1 is impossible, display may be done based on the condition information stored in the terminal. In

1 this case, when the user using the input unit 3-3 references the condition information, it is  
determined whether or not connection to the server 1 is possible. When connection to the  
server 1 is impossible, the condition information and the latest acquiring time stored in the  
storage unit 3-8 are transmitted to the freshness management unit 3-9. The freshness  
5 management unit 3-9 determines the freshness of the condition information from the difference  
between the latest acquiring time and the current time and transmits the condition information  
and freshness information to the display control unit 3-10.

9 Thereby, even if the latest condition information cannot be acquired, display can be  
made according to the freshness of the condition information based on the condition  
information stored in the terminal and the latest acquiring time information. The user can  
therefore recognize the content and reliability of the stored condition information only by  
observing the display on the display area without memorizing the time when the condition  
13 information was acquired.

17 Moreover, when the terminal has the display control unit 3-10, the display mode of the  
freshness information can be set for each user. When the server 1 is provided with the display  
control unit, the display mode of the condition information may be performed for all the users  
at the same time based on the freshness information and the display mode determined in the  
server 1. Further, different freshness information can be determined for each user by setting  
for each user the interval of time passage in the freshness level determination table illustrated  
in Fig. 4.

21 In the same manner as illustrated in Fig. 5, freshness of condition information can be  
displayed in the display mode depending on a request by the users setting the display mode for  
each user depending on the freshness level. Fig. 9, Fig. 10 and Fig. 18 illustrate other  
examples of the display modes corresponding to the freshness level. Fig. 9 illustrates an  
25 example for gradually making smaller the size of the icon of the condition information  
depending on the freshness level. Fig. 10 illustrates an example in which the display mode of  
icon of the condition information is never updated and a mark indicating the freshness level is

1 added to the upper right side of icon and thereby concentration of the added mark is changed  
 depending on the freshness level. Fig. 18 illustrates an example for gradually changing the  
 color of the icon of the condition information depending on the freshness level.

5 According to the second embodiment if the update time cannot be acquired from the  
 server 1 or when the server 1 does not store the update time at the time when the condition  
 information has been acquired, the freshness information can be determined based upon the  
 condition information stored in the terminals 3, 4 and 5 and by setting a time when the  
 condition information is received as the reference time (the latest acquiring time) using the  
 9 clock function 3-11 of the terminals 3, 4 and 5. In this case, it is possible to display multiple  
 freshness levels determined from various points of views of the acquired condition  
 information.

An application example of the second embodiment will be illustrated below.

13 (1) In the embodiments explained above, the terminal acquires only the condition  
 information from the server 1 and determines the time when the information is received or  
 acquired as the reference time for determining freshness information. However, in this case,  
 freshness of the condition information is always displayed as the latest even if the condition  
 information is not yet updated each time when it is acquired. Therefore, in order to prevent  
 17 this, a function is added to update the reference time for determining freshness information.  
 Not only the acquiring time for the acquired condition information but also a time when the  
 same contents as the relevant condition information is first acquired (hereinafter referred to as  
 the first acquiring time) is also stored in the storage unit 3-8. Fig. 11 illustrates an example of  
 21 the condition information in a table stored in the storage unit 3-8 for this process. Fig. 12  
 illustrates the process using such table. Upon reception of the condition information (O31 of  
 Fig. 12), the terminal compares the newly acquired condition information with the condition  
 25 information stored in the storage unit 3-8 to determine whether or not the newly acquired  
 condition information matches the condition information stored in the storage unit 3-8 (O32 of  
 Fig. 12). If the condition information match or are identical, the latest acquiring time is

1 updated to the current time (O33 of Fig. 12). If the condition information do not match or are  
different, the condition information in the storage unit 3-8 is replaced with the newly acquired  
condition information and the latest acquiring time and the first acquiring time are updated to  
the current time (O34 of Fig. 12). The condition information and the first acquiring time are  
5 transmitted to the freshness management unit 3-9. The freshness management unit 3-9  
determines the freshness information with reference to the first acquiring time. This avoids  
updating the freshness information each time the condition information is acquired even if  
contents of the condition information are never updated. A user can recognize that the  
9 condition information is not updated for a long time if the updated condition information is  
never sent from the server and can determine that reliability of the condition information being  
displayed may be low.

13 (2) In the case where the condition information and the update time can be acquired  
by the terminal from the server and the time when the condition information is acquired in the  
terminal side is also acquired (the latest acquiring time), the terminal stores in the storage unit  
3-8 the condition information, the update time acquired from the server and the time when the  
condition information is acquired. It is possible for the freshness management unit 3-9 not  
17 only to determine the freshness information from the difference between the update time stored  
in the server and the current time but also to determine respective freshness information from  
the difference between the update time acquired from the sever and the latest acquiring time  
and the difference between the latest acquiring time and the current time, thereby providing the  
21 capability to display the display mode of the condition information depending on any freshness  
information among these freshness information or to display the display mode of the condition  
information by combining these freshness information.

25 The method of displaying the freshness information depending on the difference  
between the update time and the current time is effective for verifying freshness of the  
condition information itself. For the method of displaying the freshness information depending  
on the difference between the latest acquiring time and the current time, it is enough to verify

1 the condition information when the request is generated and this method is effective for the  
 case wherein the freshness of the condition information itself is not required to be considered  
 but the time passage from the time when the condition information has been acquired can be  
 recognized. The method of displaying, in combination, the freshness information depending  
 5 on the difference between the update time and the current time and the freshness information  
 depending on the latest acquiring time and the current time is effective for the case wherein the  
 condition information is recognized or evaluated to determine whether it is reasonable or not,  
 depending on freshness of the condition information itself and depending on whether or not a  
 9 long time has passed from the time when the information has been acquired (from the latest  
 acquiring time) even when the condition information is never updated.

In another application example, it is also possible to verify by recognizing or observing,  
 at a glance, which users have referred to the condition information by providing a function that  
 13 stores if the user has referred to the condition information. Fig. 13 illustrates a display  
 example of this embodiment. A mark "NEW!" is added to the icon indicating the condition  
 information of the users "TOHKO" and "ERI". This mark indicates that the user has referred  
 this condition information for the first time.

17 In this case, as illustrated in Fig. 14, not only the condition information of the user and  
 the update time but also the users having referred to the condition information are stored in  
 correspondence to the condition information in DB 1-7. Upon reception of the acquiring  
 request from the terminal, the acquiring request processing unit 1-6 refers to the condition  
 21 information DB 1-7 and stores the information for identifying the user who has issued the  
 request in a list of the users who have referenced the condition information (reference user  
 list). Moreover, upon reception of the acquiring request from the terminal, the acquiring  
 request processing unit 1-6 determines whether or not the user who has issued the request is  
 25 registered by referring to the reference user list. When the user is not registered, information  
 indicating non-reference is transmitted together with the condition information and when the  
 user is registered, the information indicating that reference has been made is transmitted

1 together with the condition information.

The display control unit of the terminal determines not only the display mode of the freshness information determined by the freshness management unit but also the display mode of the non-reference/ reference information.

### 5 Third Embodiment

Fig. 15 illustrates the system configuration of the third embodiment. In the first and second embodiments, the condition information is acquired from the terminals 3, 4, 5 but, in this embodiment, the server 1 notifies change of user conditions to the terminals 3, 4, 5. In this embodiment, moreover, as in the case of the second embodiment, the freshness management unit and the display control unit is provided in the terminals 3, 4, 5.

To notify the terminal of changes in the condition information, the server 1 is provided with a notification request processing unit 1-9 and a notify unit 1-10. The notification request processing unit 1-9 receives a condition information notification request from the terminal and registers this request as a notification destination in a notification destination list 1-11 for use when the condition information is changed. The notify unit 1-10 receives a notification message for change of condition information and notifies the terminal of the changed condition information based on the notification destination list 1-11. The notification destination list 1-11 is formed of a correspondence table to indicate which user will be notified when the condition information of a certain user is changed. The terminal via the input unit 3-3 instructs the condition information notification request and the request transmitting unit 3-4 transmits to the server 1 via the communication unit 3-8 the condition information notification request, including information of users who desire to receive condition information notification.

The request determining unit 1-4 of the server 1 receives the condition information notification request via the communication unit 1-3 and then transmits the condition information notification request to the notification request processing unit 1-9. The notification request processing unit 1-9 stores the corresponding users included in the condition

1 information notification request and the users having issued the condition information  
notification request in the notification destination list 1-11.

Explained next is the flow of process to notify change of condition information to a user  
who desires to receive notification when the condition information of a certain user has  
5 changed.

Here, it is assumed that the change of the user's condition information has been sent to  
the server 1 via the terminal. The update request processing unit 1-5 of the server 1 updates  
the condition information of the relevant user in the condition information DB 1-7 and the  
9 update time and simultaneously notifies the notify unit 1-10 that condition information has been  
updated. The notify unit 1-10 refers to the notification destination list 1-11 to determine  
whether or not there is a terminal to which the changed condition information of the user for  
whom the update has been generated should be notified. When there is a notification  
13 destination, the notify unit 1-10 transmits the notification message to the relevant terminal.  
Here, it is assumed that the update time is included in addition to the new condition  
information in the contents of the notification message. When the terminals 3, 4, 5 of  
notification destination and the server 1 are in the communication ready condition, the  
17 notification message is quickly transmitted to the terminals and the response processing unit 3-  
5 processes the notification message. The freshness management unit 1-9 and the display  
control unit 3-10 determine the freshness information based on the condition information and  
the update time transmitted from the server 1 and the display mode of the condition  
21 information depending on the determined freshness information.

Here, it is important to determine which reference time to use for determining the  
freshness information. When the time period from the time the condition information changes  
until the notification message is received by the terminal is comparatively short, namely when  
25 there is little difference between the update time of the condition information and the latest  
acquiring time at the terminal, the time passage up to the current time may be determined by  
using either the update time or the latest acquiring time as the reference time. However, when



1 the difference is comparatively large due to congestion of the network, it is preferable to  
determine the freshness information based on the difference from the update time. Moreover,  
it is also possible, as illustrated in the second embodiment, to display, through combination,  
the freshness information determined depending on the update time and the freshness  
5 information determined depending on the latest acquiring time.

Moreover, when the terminal and server are not always in the communication ready  
condition like the hand-held telephone network, a notification message storing unit which  
stores temporarily the notification message may further be provided in the server side. In this  
9 case, when it is detected by a certain means that the notification destination terminal and the  
server are in the communication ready condition, the notification message stored in the  
notification message storing unit is transmitted to the notification destination terminal. Since  
the update time is provided together with the condition information in the notification message,  
13 the freshness information can be determined with reference to the update time even if  
difference between the time the notification message is transmitted to the terminal and the  
update time is large. Therefore, even in this case, the user can detect or observe, by his sense,  
how long ago the condition information was changed.

#### Other Embodiments

In the above embodiments, an example for displaying the condition information to each  
user has been explained. However, it is also possible to incorporate the present invention in a  
21 system which can process a plurality of users in a predetermined group unit.

Fig. 16(a) illustrates an example in which the condition information of the grouped  
users is displayed for each group. Each group corresponds to a plurality of users. In Fig.  
16(a), the mark "NEW!" is displayed at the side of a group name "CLUB". It means that  
25 condition information has been changed in any user belonging to the group "CLUB". In Fig.  
16(a), when the group "CLUB" is selected, "MAMIKO", "CHIKA", "MOKO" belonging to  
the group are displayed. A "NEW!" mark is displayed to the user "MOKO" and thereby it

1 can be verified that condition of "MOKO" has been updated.

Fig. 17 illustrates the flow of process for displaying the freshness information in the group unit. When display of the group is instructed (O51 of Fig. 17), condition information and the freshness information of the users of each group unit to be displayed are collected (O52 of Fig. 17). The condition information and the freshness information representing the group is determined for each group (O53 of Fig. 17). Here, when the function is provided to additionally display, as the freshness level, the mark "NEW!", which indicates that the condition information has not been referenced even once after the condition information has been updated, it is determined if the mark "NEW!" is additionally displayed as the freshness level of the group. Next, the display mode of the condition information and the determined freshness information is displayed (O54 of Fig. 17).

Next some methods for totalizing or calculating the freshness information of the condition information of the group or each user in the group will be described.

(1) The highest freshness level among the freshness levels of the users, namely the latest freshness of the condition information is determined as the freshness level of the group.

(2) An average freshness level of each user is determined as the freshness level of the group.

(3) Number of users for each freshness level is collected and the freshness level of the largest number of users is determined as the freshness level of the group.

This example is effective for the case where the interface for displaying the group list is provided. A user can verify the freshness of the condition information of the users in the group without individually verifying the condition information of the users of each group.

The preferred embodiments of the present invention have been explained considering the condition information of users as the example. However, the present invention is not limited only to the condition information of users and the present invention can easily be applied to any information which changes from time to time.

1 CLAIMS

What is claimed is:

5 1. A method of displaying condition information which changes from time to time in a system transmitting and receiving the condition information from terminals connected to a network and displaying the condition information using a display unit, the system performing a process comprising:

9 storing a reference time for determining a freshness of the condition information in a terminal which receives the condition information from other terminals through the network;

determining the freshness of the condition information based on an elapsed time from said reference time; and

13 determining depending on the freshness of the condition information a display mode of the condition information, wherein the display unit displays the display mode of the condition information and a user can observe at a glance reliability of the condition information.

17 2. A method of displaying condition information as claimed in claim 1, wherein determining the freshness comprises:

calculating a difference between the time the terminal receives the condition information from the other terminals and the time the other terminals reference the condition information in the terminal receiving the condition information; and

21 determining a freshness level of the condition information depending upon a preset rule.

25 3. A condition display system transmitting and receiving condition information which changes from time to time from terminals connected to a network and displaying the condition information using a display unit, comprising:

a storage unit storing a reference time for determining a freshness of the condition information in a terminal which receives the condition information from other terminals

1 through the network;

a freshness determination unit determining the freshness of the condition information based on the elapsed time from said reference time; and

5 a display controlling unit determining depending on the freshness of the condition information a display mode of the condition information, wherein the display unit displays the display mode of the condition information and a user can observe at a glance reliability of the condition information.

9 4. A condition display system as claimed in claim 3, wherein the freshness determining unit determines the freshness by calculating a difference between the time the terminal receives the condition information from the other terminals and the time the other terminals reference the condition information in the terminal receiving the condition information and determining a freshness level of the condition information depending upon a preset rule.

13 5. A condition display system as claimed in claim 3, wherein line widths of figure data corresponding to the display mode of the condition information are thick upon update of the condition information and line widths of the figure data are thinner as the freshness level deteriorates.

17 6. A condition display system as claimed in claim 3, wherein size of figure data corresponding to the display mode of the condition information are large upon update of the condition information and size of the figure data are smaller as the freshness level deteriorates

21 7. A condition display system as claimed in claim 3, wherein a mark is added to each figure data corresponding to the display mode of the condition information and the mark is bold upon update of the condition information and the mark is lighter as the freshness level deteriorates.

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8. A hand-held communication terminal connected to a network automatically receiving through the network, at one of any time and in a predetermined timing, condition information automatically transmitted through the network from a terminal receiving the condition information from other terminals, at one of any time and in the predetermined timing, the hand-held communication terminal performing a process comprising:

displaying a display mode of the condition information received through the network;  
and

changing the display mode of the condition information depending on a passage of time as freshness information.

9. A hand-held communication terminal as claimed in claim 8, further comprising a process of determining the passage of time as the freshness information by calculating a difference between a current time and a time the terminal receives the condition information.

10. A hand-held communication terminal as claimed in claim 8, further comprising a process of determining the passage of time as the freshness information by calculating a difference between a current time and a time the hand-held communication terminal receives the condition information.

11. A hand-held communication terminal as claimed in claim 8, further comprising a process of determining the passage of time as the freshness information by calculating a difference between a time the terminal receives the condition information and a time the hand-held communication terminal receives the condition information.

12. A hand-held communication terminal as claimed in claim 8, wherein the condition information is condition information of a user.

1           13. A hand-held communication terminal as claimed in claim 8, wherein the condition  
information is condition information of a group of users and users in the group.

5           14. A method of displaying condition information which changes from time to time in a  
condition information management system transmitting and receiving the condition information  
from terminals connected to a network, comprising:

storing in a terminal the condition information received from other terminals;

determining display mode changing information; and

9           transmitting automatically the condition information received by the terminal and the  
display mode changing information to the other terminals through the network.

13           15. A method of displaying condition information as claimed in claim 14, further  
comprising determining freshness of the condition information by calculating a difference  
between a time the terminal receives the condition information from the other terminals and a  
time the terminal transmits the condition information to the other terminals; and

17           determining depending on the freshness of the condition information a display mode of  
the condition information, wherein the terminal transmits to the other terminals the display  
mode of the condition information as the display mode changing information.

21           16. A method of displaying condition information as claimed in claim 14, wherein the  
terminal transmits automatically the condition information received by the terminal to the other  
terminals through the network upon receiving a condition information request from the other  
terminals.

25           17. A method of displaying condition information as claimed in claim 14, wherein the  
terminal transmits automatically the condition information received by the terminal to the other  
terminals through the network in a predetermined timing to a predetermined list of the other

1 terminals.

18. A method of displaying condition information as claimed in claim 17, wherein the terminal storing the condition information receives from the other terminals a condition  
5 information notification request comprising terminal destinations and registers the terminal destinations included the request in the predetermined list of the other terminals.

19. A method of displaying condition information as claimed in claim 14, wherein the  
9 terminal transmits to the other terminals a time the terminal receives the condition information as the display mode changing information.

20. A method of displaying condition information as claimed in claim 15, wherein the  
13 terminal receives condition information of a user and the terminal transmits automatically the condition information of the user received by the terminal to the other terminals through the network upon receiving a condition information request from the other terminals, further comprising a process of:

17 storing identifying information of the user in a reference user list upon receiving the condition information request; and

21 displaying a figure mark corresponding to the display mode of the condition information of each user depending on users in the reference user list issuing the condition information request.

21. A computer readable recording medium having a system transmitting and receiving the condition information from terminals connected to a network and displaying the condition  
25 information using a display unit, the system performing a process comprising:

storing a time a terminal receives the condition information from other terminals through the network;

1 determining freshness of the condition information at a time the other terminals through  
the network reference the condition information in the terminal receiving the condition  
information; and

5 determining depending on the freshness of the condition information a display mode of  
the condition information, wherein the display unit displays the display mode of the condition  
information and a user can observe at a glance reliability of the condition information.

9 22. A hand-held communication terminal connected to a network automatically  
receiving through the network condition information automatically transmitted through the  
network from a terminal receiving the condition information from other terminals and the  
hand-held communication terminal displaying the condition information using a display unit,  
comprising:

13 a freshness determination unit determining freshness of the condition information  
received by the hand-held communication terminal through the network from the terminal; and  
a display controlling unit determining depending on the freshness of the condition  
information a display mode of the condition information, wherein the display unit displays the  
display mode of the condition information.

21 23. A hand-held communication terminal as claimed in claim 22, wherein the freshness  
determination unit calculates a difference between a current time and a time the terminal  
receives the condition information for determining freshness of the condition information.

25 24. A hand-held communication terminal as claimed in claim 22, wherein the freshness  
determination unit calculates a difference between a current time and a time the hand-held  
communication terminal receives the condition information for determining freshness of the  
condition information.



1           25. A hand-held communication terminal as claimed in claim 22, wherein the freshness  
determination unit calculates a difference between a time the terminal receives the condition  
information and a time the hand-held communication terminal receives the condition  
information for determining the freshness of the condition information.

5           26. A hand-held communication terminal as claimed in claim 22, wherein the condition  
information is condition information of a user.

9           27. A hand-held communication terminal as claimed in claim 22, wherein the condition  
information is condition information of a group of users and users in the group.

13           28. A hand-held communication terminal as claimed in claim 22, wherein the terminal  
transmits automatically the condition information received by the terminal to the hand-held  
communication terminal through the network upon receiving a condition information request  
from the hand-held communication terminal.

17           29. A hand-held communication terminal as claimed in claim 22, wherein the terminal  
transmits automatically the condition information received by the terminal to the hand-held  
communication terminal through the network in a predetermined timing.

21           30. A hand-held communication terminal as claimed in claim 22, wherein the terminal  
receives condition information of a user and the terminal transmits automatically the condition  
information of the user received by the terminal to the hand-held communication terminal  
through the network upon receiving a condition information request from the hand-held  
25 communication terminal, wherein the terminal comprises:

an acquiring request processing unit storing identifying information of other users  
issuing condition information requests corresponding to the condition information of the user

1 in a reference user list upon receiving the condition information requests from the other users  
and the terminal references the reference user list and automatically transmits to the hand-held  
communication unit, in addition to the condition information of the user, the identifying  
information of the other users issuing the condition information requests corresponding to the  
5 condition information of the user; and

the display controlling unit determines a figure mark corresponding to the display mode  
of the condition information of the user, depending on the other users issuing the condition  
information requests corresponding to the condition information of the user, and the display  
9 unit displays the figure mark corresponding to the display mode of the condition information of  
the user.

31. A method of displaying in a display mode condition information which changes  
13 from time to time in a condition information management system transmitting and receiving the  
condition information from terminals connected to a network, comprising a process of:

storing in a terminal a reference time corresponding to a time the terminal receives the  
condition information from another terminal; and

17 changing the display mode of the condition information depending on timeliness  
information of the condition information determined using the reference time and a rule, upon  
receiving a request from the terminals to display the condition information.

21 32. A display, comprising a graphical user interface showing a display mode of user  
condition information and timeliness of the user condition information depending on passage of  
time.

25 33. A method of displaying on a screen of a computer terminal an awareness  
information of a person using other computer terminal connected to a network, the method  
performing a process comprising:

- 1 storing a reference time for determining a freshness of the awareness information in a  
terminal which receives the awareness information from other terminals through the network;  
determining freshness of the awareness information based on an elapsed time from said  
reference time; and
- 5 determining depending on the freshness of the awareness information a display mode of  
the awareness information, wherein said awareness information is displayed with a variable  
icon pattern according to said display mode and a user of said terminal can observe at a glance  
reliability of the awareness information.

9

1 ABSTRACT OF THE DISCLOSURE

A system and method transmitting and receiving condition information which changes  
 from time to time from terminals connected to a network, monitoring the reliability of the  
 condition information and displaying a display mode of the condition information depending on  
 the reliability of the condition information comprising a freshness determination unit  
 calculating freshness of the condition information from a difference between a time a terminal  
 receives the condition information from other terminals through the network and a time the  
 condition information is referenced by other terminals through the network and a display  
 controlling unit determining depending on the freshness information determined by the  
 freshness determination unit the display mode of the condition information, wherein the  
 display unit displays the display mode of the condition information.

【書類名】

図 面

【図 1】

利用者状態管理システムの機器構成図

APPARATUS CONFIGURATION  
DIAGRAM OF USER  
CONDITION MANAGEMENT  
SYSTEM

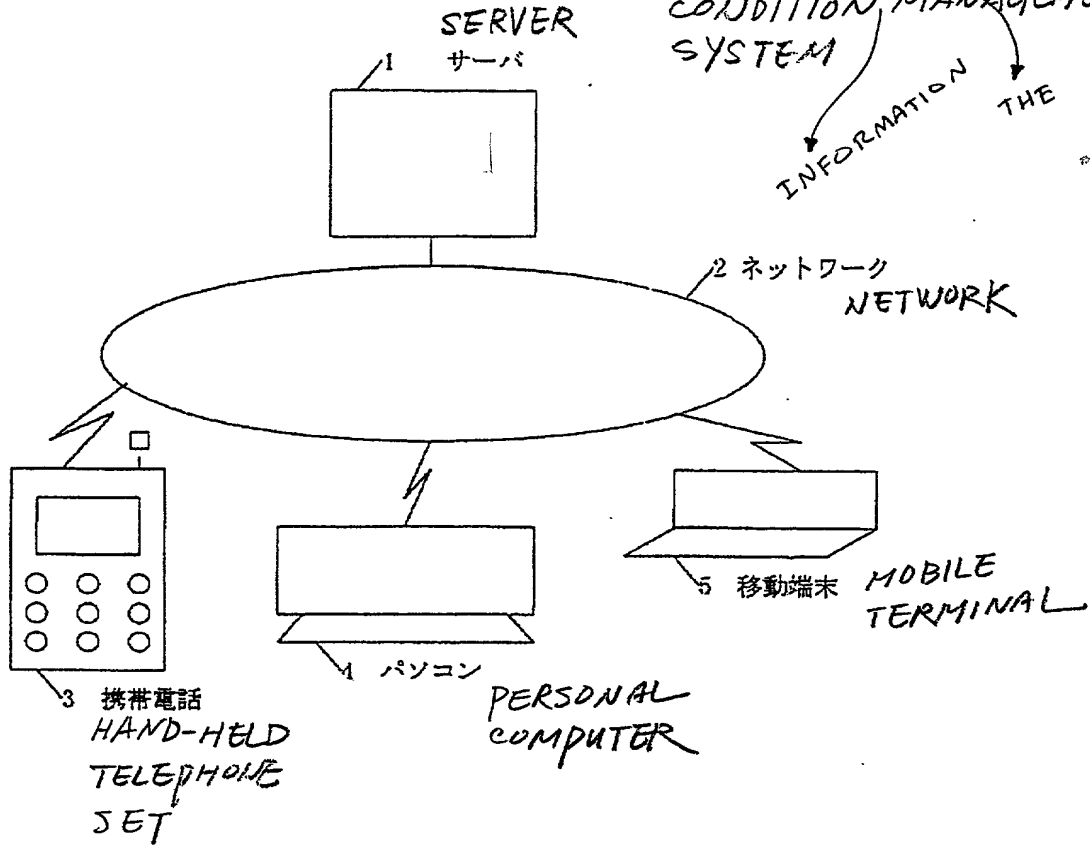
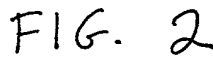


FIG. 1

009020-00000000

... INVESTMENT

第1の実施例におけるシステム構成を示す図



【図3】

DIAGRAM ILLUSTRATING THE  
FLOW OF PROCESS IN THE  
FIRST EMBODIMENT

整理番号: 99-95083

SEND THE CONDITION  
INFORMATION  
ACQUIRING  
REQUEST  
TO THE SERVER.

REQUEST  
TRANSMITTING  
MEANS UNIT

ACQUIRE THE CONDITION  
INFORMATION FROM THE CONDITION  
INFORMATION DB DEPENDING ON THE  
REQUEST AND SEND THE INFORMATION  
TO THE FRESHNESS MANAGEMENT  
PROCESSING MEANS TOGETHER WITH  
THE UPDATE TIME ACQUIRED  
SIMULTANEOUSLY.

RESPONSE  
PROCESSING  
MEANS UNIT

DISPLAY  
MEANS UNIT

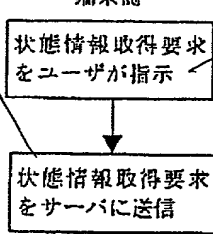
STORE THE RECEIVED  
INFORMATION TO THE  
STORAGE MEANS AND  
ALSO SEND THIS INFORMATION  
TO THE DISPLAY MEANS UNIT.

FORM THE RESPONSE  
INCLUDING THE DISPLAY  
CONTENTS FROM THE  
DISPLAY CONTROL MEANS  
AND SEND THE  
RESPONSE TO THE  
TERMINAL.

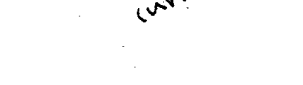
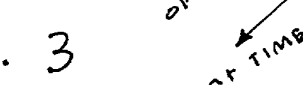
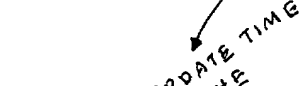
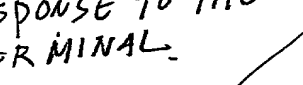
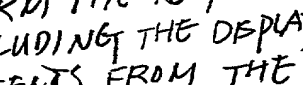
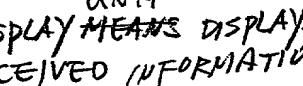
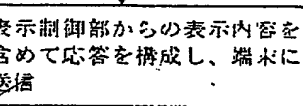
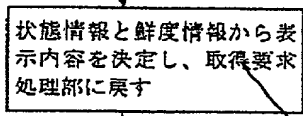
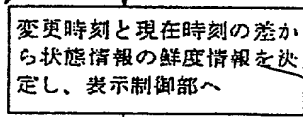
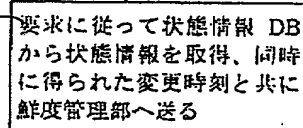
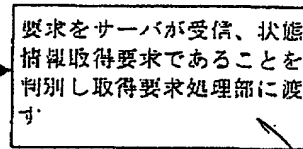
FIG. 3

第1の実施例における処理の流れを示す図

TERMINAL SIDE



USER INSTRUCTS THE  
CONDITION INFORMATION  
ACQUIRING REQUEST.



SERVER SIDE

REQUEST DETERMINING  
MEANS UNIT

ACQUIRING REQUEST  
PROCESSING MEANS UNIT

FRESHNESS  
MANAGEMENT  
MEANS UNIT

DISPLAY CONTROL  
MEANS UNIT

ACQUIRING  
REQUEST  
PROCESSING  
MEANS UNIT

DETERMINE  
THAT THE SERVER  
RECEIVES THE  
REQUEST AND THE  
REQUEST IS THE  
CONDITION INFO-  
MATION ACQUIRING  
REQUEST AND  
TRANSFER THE  
REQUEST TO THE  
ACQUIRING REQUEST  
PROCESSING MEANS UNIT

DETERMINE THE  
THE FRESHNESS INFORMATION  
OF CONDITION INFORMATION  
FROM DIFFERENCE BETWEEN  
THE CONDITION INFORMATION  
AND THE FRESHNESS  
INFORMATION AND  
SEND THIS INFORMATION  
TO THE DISPLAY CONTROL  
MEANS UNIT.

DETERMINE THE DISPLAY  
CONTENTS FROM THE  
CONDITION INFORMATION  
AND THE FRESHNESS LEVEL  
INFORMATION AND  
RETURN THE ACQUIRING  
TO

REQUEST PROCESSING  
MEANS UNIT

UPDATE TIME  
OF THE  
CURRENT TIME

DIAGRAM ILLUSTRATING AN  
EXAMPLE OF FRESHNESS LEVEL  
鮮度レベル判定テーブルを例を示す図 DETERMINING  
TABLE

INITIAL TIME

	初期	10分後	30分後	1時間後
FRESHNESS LEVEL	鮮度1	鮮度2	鮮度3	鮮度4

AN HOUR LATER

FRESHNESS 1

FRESHNESS 2

10 MINUTES LATER

FRESHNESS 3

30 MINUTES LATER

FIG. 4



Fig. 5
















Condition Information	Normal display	Freshness Level			
		F1	F2	F3	F4
Happy					
Angry					
Busy					

Fig. 6




















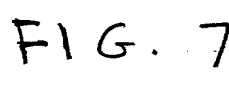
SATOMI		Happy
KENTA		Angry
TOHKO		Working
ERI		Study

Fig. 9

Condition Information	Normal display	Freshness Level			
		F1	F2	F3	F4
Happy					
Angry					
Busy					


















整理番号:99-95083

TERMINAL SIDE

SERVER SIDE



Fig. 10

Condition Information	Normal display	Freshness Level			
		F1	F2	F3	F4
Happy					
Angry					
Busy					

Blink

Fig. 13





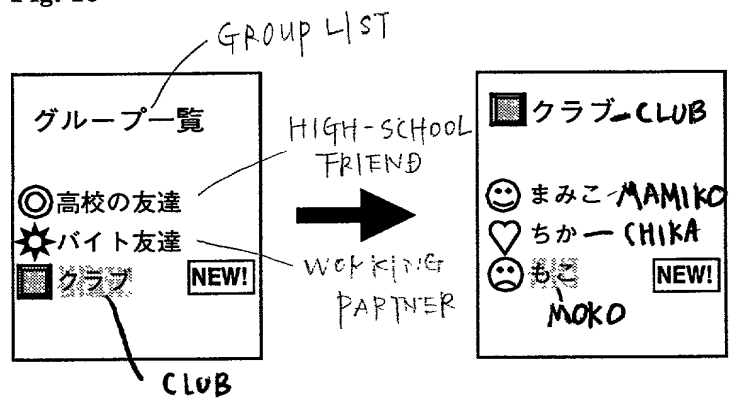
SATOMI		Very Busy
KENTA		Angry
TOHKO		Working
ERI		Happy

Fig. 16



【図11】

記憶部に記憶される状態情報の例を示す図

DIAGRAM ILLUSTRATING AN  
EXAMPLE OF THE CONDITION  
INFORMATION STORED IN THE  
STORAGE MEANS UNIT

ユーザID	状態	最新取得時刻	初回取得時刻
satomi@xxx.c	幸	19990601T144530Z	19990601T144530Z
eri@friends.net	忙	19990601T144530Z	19990601T144530Z
kenta@buddy.c	怒	19990601T144530Z	19990601T130000Z

USER  
ID

FIRST ACQUIRING  
TIME

CONDITION

HAPPY

BUSY

ANGRY

LATEST ACQUIRING TIME

FIG. 11

【図12】

FLOWCHART ILLUSTRATING AN EXAMPLE  
OF PROCESS IN THE OTHER EMBODIMENT  
SECOND

整理番号: 99-95083

他の実施例における処理の例を示すフローチャート

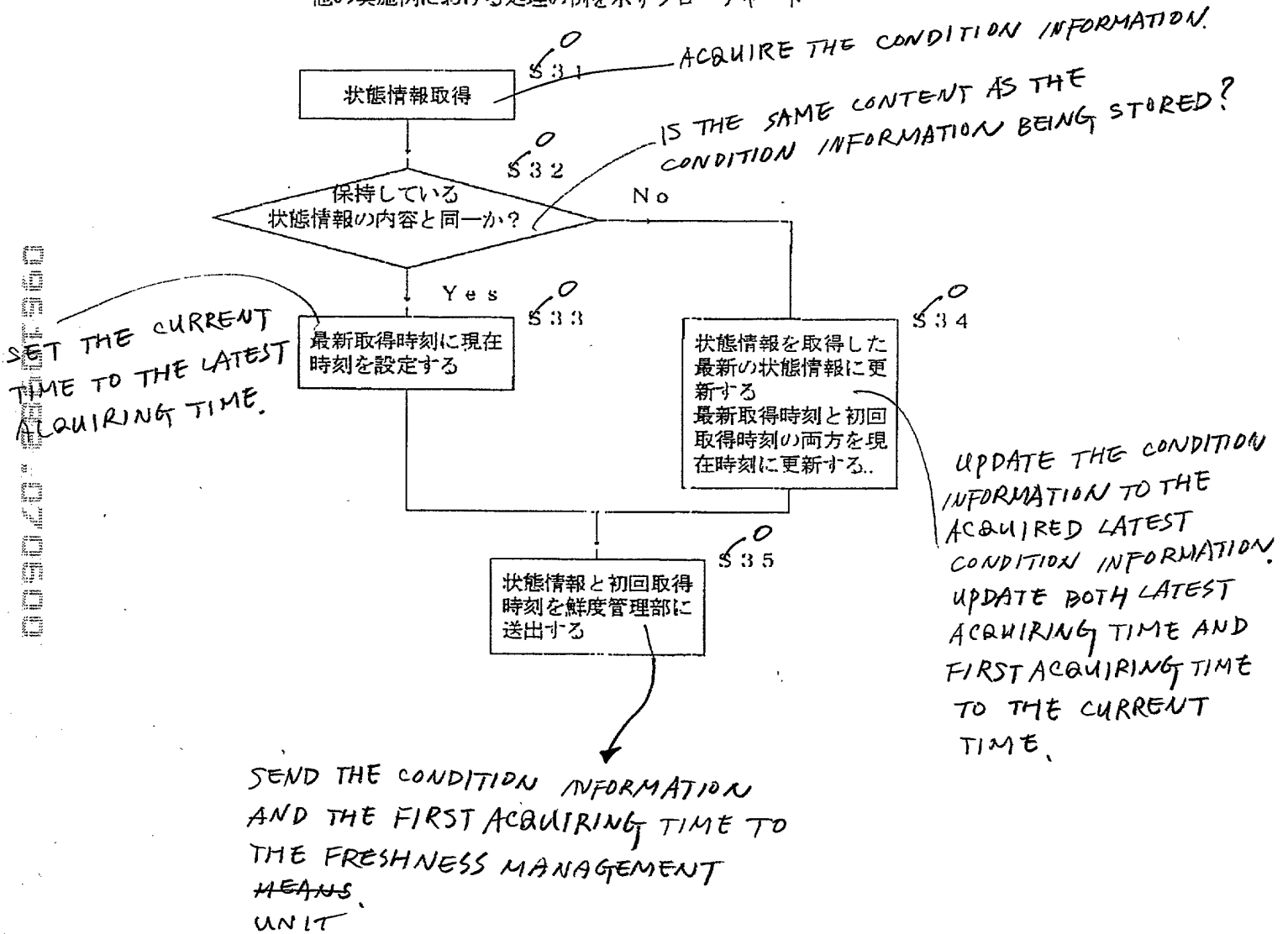


FIG. 12

COMMENT 36007900

DIAGRAM ILLUSTRATING AN EXAMPLE  
OF PROCESS OF THE OTHER EMBODIMENTS OF  
THE PRESENT INVENTION STORING THE  
USER REFERENCE LIST

【図 14】

本発明のその他の実施例の処理の例を示す図

ユーザID	状態	ひとこと	変更時刻	既参照者リスト
satomi@xxxx.c	忙	超忙しい	19990601T103051Z	suga@friends.net, kenta@mail.yyy.co.jp
eri@friends.net	幸	ハッピー	19990601T122346Z	
kenta@mail.yy.co	怒	むかつく	19990601T110138Z	suga@friends.net
tohko@buddy.c	忙	バイト中	19990601T140628Z	
...			...	

CONDITION

USER ID

BUSY

VERY BUSY

HAPPY

ANGRY

HAPPY

BUSY

UPDATE TIME

ANGRY

WORKING

FIG. 14

STORAGE MANAGEMENT  
MEANS UNIT

ACQUIRING REQUEST  
PROCESSING MEANS  
UNIT

【图 15】

CONDITION  
INFORMATIONAL  
DB

UPDATE  
REQUEST  
PROCESSING  
MEANS  
UNIT

一步狀態管理サ一八  
USER CONDITION  
MANAGEMENT  
SERVER

REQUEST DETERMINING  
~~MEANS~~ UNIT

MEANS UNIT  
-NOTIFICATION DESTINATION LIST

COMMUNICATION MEANS  
UNIT

NOTIFY MEANS UNIT

整理番号: 99-95083

NOTIFICATION REQUEST  
PROCESSING UNIT

[illegible]



【図17】

グループの鮮度レベルを表示する処理の内容を示すフローチャート

FLOWCHART ILLUSTRATING  
CONTENTS OF PROCESS FOR  
DISPLAYING FRESHNESS  
LEVEL OF GROUP

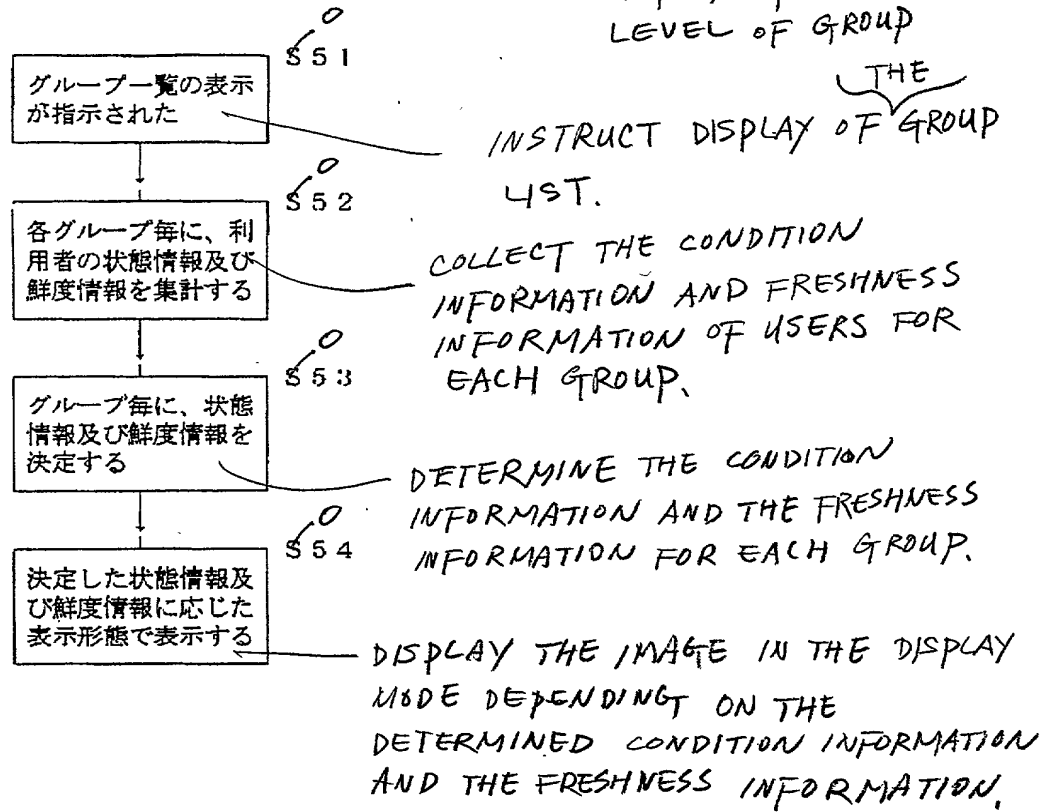


FIG. 17































		Normal display	Freshness Level			
			F1	F2	F3	F4
Condition Information	Happy		 <i>dark red</i> <i>orange</i>	 <i>red</i>	 <i>pink</i>	 <i>yellow</i>
	Angry		 <i>dark blue</i>	 <i>blue</i>	 <i>light blue</i>	 <i>yellow</i>
	Busy		 <i>dark blue</i>	 <i>blue</i>	 <i>light blue</i>	 <i>yellow</i>

FIG. 18

009020 E860T560

(202) 434-1500

		Normal display	Freshness Level			
			F1	F2	F3	F4
Condition Information	Happy		 <i>dark</i>	 <i>red</i>	 <i>pink</i>	 <i>yellow</i>
	Angry					
	Busy					

*orange* (pointing to F2) *yellow* (pointing to F3) *simon* (pointing to F4)

*dark blue* (pointing to F1) *blue* (pointing to F2) *light blue* (pointing to F3)

FIG. 18

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下記の氏名の発明者として、私は以下の通り宣言します。

As a below named inventor, I hereby declare that:

私の住所、私書箱、国籍は下記の私の氏名の後に記載された通りです。

My residence, post office address and citizenship are as stated next to my name.

下記の名称の発明に関して請求範囲に記載され、特許出願している発明内容について、私が最初かつ唯一の発明者（下記の氏名が一つの場合）もしくは最初かつ共同発明者であると（下記の名称が複数の場合）信じています。

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

INFORMATION DISPLAY METHOD AND  
APPARATUS AND RECORDING MEDIUM

上記発明の明細書（下記の欄でx印がついていない場合は、本書に添付）は、

the specification of which is attached hereto unless the following box is checked:

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as United States Application Number or  
PCT International Application Number  
\_\_\_\_\_ and was amended on  
\_\_\_\_\_ (if applicable).

私は、特許請求範囲を含む上記訂正後の明細書を検討し、内容を理解していることをここに表明します。

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私は、連邦規則法典第37編第1条56項に定義されるとおり、特許資格の有無について重要な情報を開示する義務があることを認めます。

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### Prior Foreign Application(s)

外国での先行出願

11-195190

JAPAN

(Number)

(Country)

(番号)

(国名)

(Number)

(Country)

(番号)

(国名)

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(Application No.)

(出願番号)

(Filing Date)

(出願日)

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(Application No.)

(出願番号)

(Filing Date)

(出願日)

(Application No.)

(出願番号)

(Filing Date)

(出願日)

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Priority Not Claimed

優先権主張なし

July 9, 1999

(Day/Month/Year Filed)

(出願年月日)

(Day/Month/Year Filed)

(出願年月日)

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below.

(Application No.)

(出願番号)

(Filing Date)

(出願日)

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(Status: Patented, Pending, Abandoned)

(現況: 特許許可済、係属中、放棄済)

(Status: Patented, Pending, Abandoned)

(現況: 特許許可済、係属中、放棄済)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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	Japanese	
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	Satoshi OKUYAMA	
第二共同発明者	日付	Second inventor's signature Date
		<i>Satoshi Okuyama</i> June 27, 2000
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国籍	Citizenship	
	Japanese	
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(第三以降の共同発明者についても同様に記載し、署名をすること)

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唯一または第一発明者名	Full name of 3rd inventor
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日付	Date
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	Akashi-shi, Hyogo JAPAN
国籍	Citizenship
	Japanese
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	Madoka MITSUOKA
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日付	Date
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国籍	Citizenship
	Japanese
私書箱	Post Office Address
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唯一または第一発明者名	Full name of 5th inventor Tetsuji MORISHITA		
発明者の署名	日付	Inventor's signature <i>Tetsuji Morishita</i>	Date June 27, 2000
住所	Residence Kobe-shi, Hyogo JAPAN		
国籍	Citizenship Japanese		
私書箱	Post Office Address c/o FUJITSU LIMITED 1-1, Kamikodanaka 4-chome, Nakahara-ku Kawasaki-shi, Kanagawa 211-8588 JAPAN		
第二共同発明者	Full name 6th joint inventor, if any		
第二共同発明者	日付	6th inventor's signature	Date
住所	Residence		
国籍	Citizenship		
私書箱	Post Office Address		

(第三以降の共同発明者についても同様に記載し、署名をす  
ること)

(Supply similar information and signature for third and subsequent  
joint inventors.)